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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/577,032

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EXAMINER

DUONG, THOI V

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/577,032	TASHIRO ET AL.	
	Examiner	Art Unit	
	Thoi V Duong	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-9 and 17-20 ~~is/are~~ pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2 and 4 ~~is/are~~ allowed.
- 6) ☒ Claim(s) 5-7,9 and 17-20 ~~is/are~~ rejected.
- 7) ☒ Claim(s) 8 ~~is/are~~ objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to the Amendments filed July 12, 2004 and August 27, 2004.

Accordingly, claims 4-7, 9, 17 and 19 were amended, and claims 3, 10-16 and 21-56 were cancelled. Currently, claims 1, 2, 4-9 and 17-20 are pending in this application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 5, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Kohama et al. (USPN 5,546,070).

Art Unit: 2871

Re claim 5, as shown in Figs. 1 and 2, Kohama et al. discloses a liquid crystal display comprising:

two substrates 10 and 20 sandwiching liquid crystal 50 and opposing to each other;

a main seal 30 attaching the two substrates at an external peripheral portion of a display area R1 of the substrates; and

a frame-shape structure 40 (outer space wall) formed in the area between the main seal 30 and the display area R1 and separating the main seal from the liquid crystal; and

a black matrix picture-frame 12 shading an area between the main seal 30 and the display area R1 (col. 4, lines 54-62),

wherein an external peripheral end of the frame-shape structure 40 and an external peripheral end of the black matrix picture frame 12 are formed to coincide with each other viewing from a perpendicular direction to the substrates (Fig. 2).

Re claim 17, as shown in Figs. 24-27, Kohama et al. discloses a liquid crystal display (LCD) comprising:

two substrates 10 and 20 attached opposing each other;

a sealing material 32 formed outside a display area having a plurality of pixels for sealing liquid crystal between two substrates; and

a plurality of structures 40 formed inside the display area R1 of the substrate 10 to which liquid crystal is dropped for controlling spreading speed of dropped liquid crystal (see also Fig. 5, step 9, col. 6, lines 6-10 and col. 8, lines 26-67),

Art Unit: 2871

wherein, re claim 18, the plurality of the structures 40 are distributed on the substrate at a predetermined arrangement density or a predetermined arrangement shape (Fig. 24).

4. Claim 9 rejected under 35 U.S.C. 102(e) as being anticipated by von Gutfeld et al. (USPN 6,179,679 B1).

As shown in Fig. 4, von Gutfeld et al. discloses a liquid crystal display comprising:

a sealing material 101 made of a photo-curing material sealing liquid crystal sandwiched between two substrates 103 and 104 (col. 1, lines 36-44) and having a portion overlapping with a shading film 105 and an opening portion (between shading film) viewed from a direction vertical to the substrate (col. 4, lines 24-29); and

a light-reflection layer 401 having a concave-convex structure which has inclined surfaces and formed only in an area to be under the sealing material on the substrate 104 (col. 4, lines 27-35).

5. Claim 19 is rejected under 35 U.S.C. 102(b) as being anticipated by Yamanochi (JP 7-168195).

As shown in Figs. 1 and 6, Fujioka et al. discloses a liquid crystal display comprising:

two substrates 11 and 12 attached opposing each other;

a sealing material 18 formed outside a display area having a plurality of pixels for sealing liquid crystal 20 between the two substrates;

Art Unit: 2871

a convex shape structure 19 (inner frame) provided in a frame shape between the sealing material 18 and the display area, on the substrate 11; and

a gap portion 21 between the sealing material 19 and the convex shape structure 19 for draining excess liquid crystal overflowing from the display area (paragraph 17).

6. Claim 20 is rejected under 35 U.S.C. 102(e) as being anticipated by Nishiguchi et al. (USPN 6,226,067 B1).

As shown in Fig. 2b, Nishiguchi et al. discloses a liquid crystal display comprising:

two substrates 1a and 1b attached opposing each other; and

a sealing material 7 formed outside a display area having a plurality of pixels for sealing liquid crystal 5 between the two substrates.

As shown in Fig. 30, Nishiguchi et al. also discloses that the sealing material 7 (wall-like structure) may have a multilayer structure of three layers (inner layer, middle layer and outer layer) (col. 16, lines 14-16). It is inherent that a hollow frame-shape sealing material is formed by the middle layer and the outer layer of the sealing material 7 at an external periphery of the inner layer of the sealing material 7 for functioning as suction in an atmosphere since this multiplayer structure improves the air-tightness seal of the display to prevent the intrusion of moisture and impurities from outside the display (col. 16, lines 16-23).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2871

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohama et al. (USPN 5,546,070) in view of Anderson et al. (USPN 6,067,142).

As shown in Fig. 2, Kohama et al. discloses the frame-shape structure 40 having a height substantially half or more of that of a spacer arranged in the display area and an alignment film 11 being formed on at least one of a surface of the frame-shape structure 40. However, Kohama et al. does not disclose that the alignment film is a perpendicular alignment film.

As shown in Fig. 1A, Anderson discloses perpendicular alignment films 10 formed on substrates 14 for making wide-viewing angle displays (col. 1, lines 13-25).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Kohama et al. with the teaching of Anderson et al. by forming a perpendicular alignment film on a substrate so as to obtain a display with wide-viewing angle (col. 1, lines 1-2).

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohama et al. (USPN 5,546,070) in view of Nishiguchi et al. (USPN 6,226,067 B1).

Kohama et al. discloses a liquid crystal display that is basically the same as that recited in claim 7 except for a second frame-shape structure formed in an external area from the main seal. As shown in Fig. 30, Nishiguchi et al. discloses a sealing material 7 having a multiplayer structure of two layers, inner and outer layers. Accordingly, the

Art Unit: 2871

inner layer and the outer layer may be considered as a main seal and a second frame-shape structure respectively.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Kohama et al. with the teaching of Nishiguchi to form a second frame-shape structure surrounded the main seal in an external area from the main seal so as to provide stronger support of the substrates and improve the reliability of the display (col. 16, lines 14-23).

.Allowable Subject Matter

10. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed. Specifically, none of the prior art of record discloses, in combination with other limitations as claimed, a part of all of the second frame-shape structure formed in the black matrix picture frame and black matrix is not formed on the seal formation area.

The most relevant reference, JP 11-119230 of Shimano, fails to disclose or suggest a part of a second frame-shape structure formed in a black matrix picture-frame. The Shimano's reference discloses a pillar-shape structure, instead of frame-shape structure, formed in a black matrix picture-frame in an external area from the main seal, wherein the black matrix is not formed on the seal formation area.

11. Claims 1, 2 and 4 are allowed.

Art Unit: 2871

The following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed. Specifically,

Re claim 1, none of the prior art of record discloses, in combination with other limitations as claimed, a blue-colored layer, a red-color layer and a green-color layer formed at an area of a shading film, wherein only the blue-colored layer is in contact with the sealing material.

The most relevant reference, USPN 5,910,829 of Shimada et al., fails to disclose or suggest that only the blue-colored layer is in contact with the sealing material. In Fig. 14, Shimada et al. shows a blue-colored layer B being in contact with the sealing material 133; however, there are only one blue-colored layer formed at an area of the shading film 134. In Figs. 15 and 16, Shimada et al. shows a blue-colored layer B, a red-color layer R and a green-color layer G formed at an area of the shading film 134a; however, the blue-colored layer B and the red-color layer R are in contact with the sealing material 133.

Re claim 4, none of the prior art of record discloses, in combination with other limitations as claimed, a light incident hole opened at a shading film above a transfer.

The most relevant reference, JP 09-090383 of Hasegawa et al. (JP'383), fails to disclose a light incident hole opened at the shading film above the transfer. As shown in Figs. 5 and 8, the JP'383 only discloses a light transmitting part (hole filled with transparent material) 53 formed at the shading film 43b.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

Art Unit: 2871

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

12. Re claim 20, Applicant's arguments filed July 12, 2004 have been fully considered but they are not persuasive.

Applicant argued that Nishiguchi fails to disclose any ability of its multilayer structure to function as a suction in an atmosphere and Nishiguchi teaches away from the invention by providing openings which destroy any ability of the structure to provide a suction.

The Examiner disagrees with Applicant's remarks.

At first, Nishiguchi discloses the multilayer structure of three layers of Nishiguchi, which is similar structure recited in claim 20, having adhesion property and high air-tightness seal (col. 15, line 46 through col. 16, line 23); accordingly, it is inherent that the multilayer structure of three layers of Nishiguchi functions as a suction in atmosphere.

Next, Nishiguchi discloses that the opening of the structure may be provided as necessary and may be sealed after the liquid crystal material is loaded; accordingly, the opening is optional and the opening is not permanently existed in the structure to destroy any ability of the structure to provide a suction. Therefore, Nishiguchi does not teach away from the invention.

Re claims 5, 9, 17 and 19, Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection as shown above.

Art Unit: 2871

Conclusion


13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong 

11/21/2004


TARIFUR R. CHOWDHURY
PRIMARY EXAMINER